



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,626	12/06/2001	Chang Yong Shin	2080-3-58	3226
35884	7590	07/09/2004	EXAMINER	
LEE, HONG, DEGERMAN, KANG & SCHMADEKA, P.C. 801 SOUTH FIGUEROA STREET 14TH FLOOR LOS ANGELES, CA 90017			KOSTAK, VICTOR R	
			ART UNIT	PAPER NUMBER
			2614	

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/008,626	SHIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Victor R. Kostak	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 March 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Note MPEP 606.01.
2. Claims 6, 7, 15 and 16 are objected to because of the following informalities:
  - i) in related claims 6 and 15, a "portion" of what is not recited;
  - ii) in claim 7 lines 8, 11 and 13, "recording" or "recorded" should probably be changed to --storing -- or -- stored--;
  - iii) in line 12 of claim 16, "multiplexer" is misspelled; and
  - iv) in the last line of claim 19, "to" should be inserted after "values". Appropriate correction is required.
3. Claims 3, 9 and 13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The subject matter of claims 3 and 9 is already covered by respective claims 1 and 8 by the first and second frame generation features (the frames are inherently output when they are generated, though not necessarily transferred).

The subject matter of claim 13 appears covered by the description of the scene transition-detecting unit recited in base claim 8.
4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Reference to "*the previously set-up sequence*" has ambiguous antecedence because base claim 17 refers to plural sequences, moreover plural *output* sequences. Furthermore, it is not clear if the sequence is to be interpreted as the individual digit run of each specific 5-digit string, or the sequence of five strings so listed in the order recited.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Swan.

The video conversion apparatus and method of Swan (noting particularly Figs. 2, 3 and 8b) involves detecting motion (scene changes) between fields of a video sequence (step 152 in Fig. 8b); detecting whether a 3:2 pull-down mode exists in the sequence (step 168); generating a first interpolated frame by interleaving (weaving) if the pull-down mode is detected (col. 13 lines 11-16). A second interpolated frame is generated using de-interlacing when 3:2 pull-down is not detected (col. 13 lines 16-19), wherein the mode is selected alternatively, thereby meeting claims 1, and 17.

As for claims 2, 8 and 13, motion between adjacent fields is used to detect changes in image sequence.

As for claims 3 and 9, the first frame is output when 3:2 pull-down is detected, and the second frame when the pull-down is not detected.

Regarding claims 4, 10-12 and 18, previous and future fields are used to generate a current field using five field memory devices (col. 5 lines 10-18).

As for claims 5 and 14, the system determines motion by counting accumulated values of field data of consecutive fields (col. 4 lines 17-20; line 63 – col. 5 line 5), thresholding being a standard condition (e.g. col. 5 lines 63-66).

As for claims 6 and 15, the motion is detected for the entire field area (col. 4 lines 59-66) using block segments.

Considering claim 19, motion is detected and determined to exist between consecutive fields by counting up the difference values there between and comparing the results to each other (noting again col. 4 line 59 – col. 5 line 18).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swan.

Although Swan does not specifically list the pull-down sequences, it would have been clearly obvious to one of ordinary skill in the art to recognize that a 3:2 pull-down sequence

characteristically covers all of the five possible set-ups of 10000, 01000, 00100, 00010, and 0001, the "1" being the duplicate field which will be found in each position depending on the group of five fields viewed. Therefore, Swan makes possible the detection thereof since he arranges five field register devices, noted above.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Claims 7 and 16 appear allowable over the prior art.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor R. Kostak whose telephone number is 703 305-4374. The examiner can normally be reached on Monday - Friday from 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 703 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 308-HELP.

*[Signature]*

Victor R. Kostak  
Primary Examiner  
Art Unit 2614

VRK